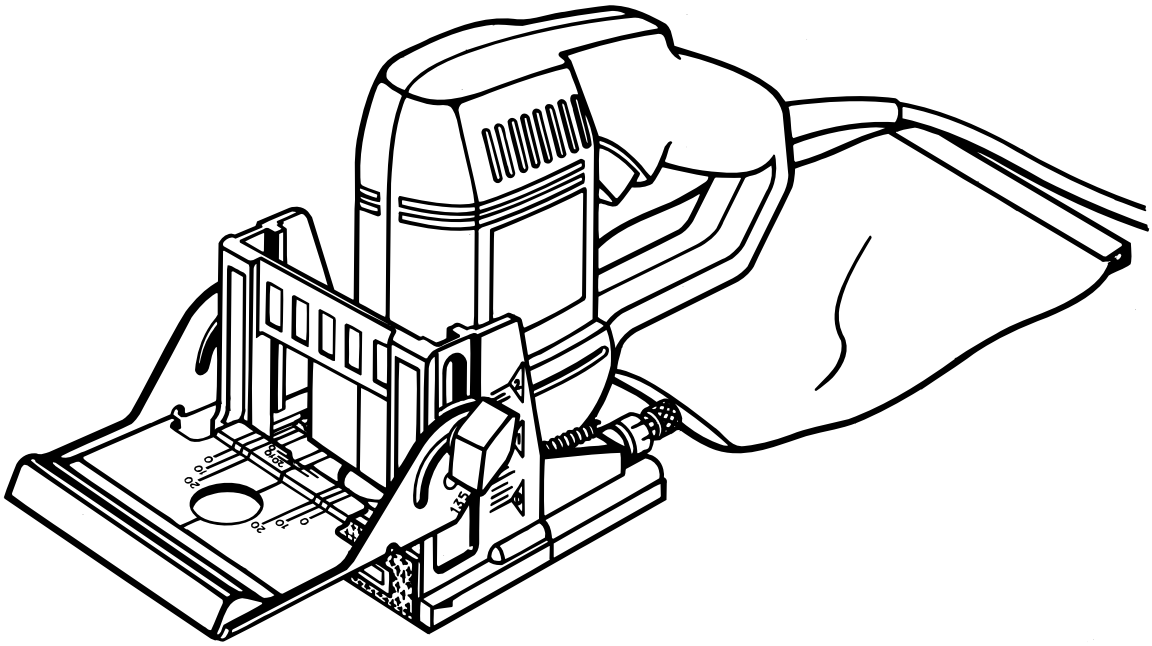
OWNER'S OPERATING MANUAL
PLATE JOINER / JM80
DOUBLE INSULATED



SPECIFICATIONS:	
No Load Speed	10,000 rpm
Rating	120 volts, 60 Hz, AC 6.0 Amperes
Fence Angle Adjustment With 45° Positive Stops	0 - 135°
Fence Height Adjustment	0 - 2 In.
Depth Of Cut With Micro Depth Of Cut Adjustment	0 - 5/8 In. (16mm)
Net Weight	6.8 lbs

THANK YOU FOR BUYING A RYOBI PLATE JOINER.

Your new plate joiner has been engineered and manufactured to Ryobi's high standard for dependability, ease of operation, and operator safety. Properly cared for, it will give you years of rugged, trouble-free performance.

⚠ **CAUTION: Carefully read through this entire owner's manual before using your new plate joiner.** Pay close attention to the Rules for Safe Operation, Warnings, and Cautions. If you use your plate joiner properly and only for what it is intended, you will enjoy years of safe, reliable service.

Thank you again for buying a Ryobi plate joiner.

SAVE THIS MANUAL FOR FUTURE REFERENCE

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INTRODUCTION

Spline joinery is one of the strongest methods of joinery used in woodworking. When glue is properly applied to a spline and to the joint area of the wood pieces being connected, a large surface area receives the adhesion properties of the glue. This forms a very strong joint.

Traditional spline joinery requires cutting slots with a router or table saw. Small, thin strips of wood must then be cut to fit inside the slots and act as splines.

Newer methods of spline joinery use a plate or biscuit joiner to cut precise mating oval slots in adjoining boards. Your new plate joiner is a fast, simple, and accurate plunge cutting tool that can be used for this purpose. It can be used to cut slots in hardwood, softwood, plywood, particle board, and other pressed woods.

Football shaped wafers, called biscuits, are then placed inside the slots with glue and used to help line up adjoining surfaces. When a water based glue is used, the biscuits swell in the joint, making an extremely strong and firm bond. White glue, yellow glue, carpenters glue, hide glue, and aliphatic resin glue are examples of water based glues.

This bonding technique has traditionally been limited to making edge-to-edge joints. However, with the use of your new plate joiner, biscuits can now be easily used to connect butt, miter, and T-joints. Biscuit joining can be as strong as mortise and tenon, tongue and groove, standard spline, and doweled joints. In most cases the material around the biscuit will break before the biscuit itself will break. A greater surface area is exposed to glue in a biscuit joint, making the seams stronger.

TYPICAL APPLICATIONS

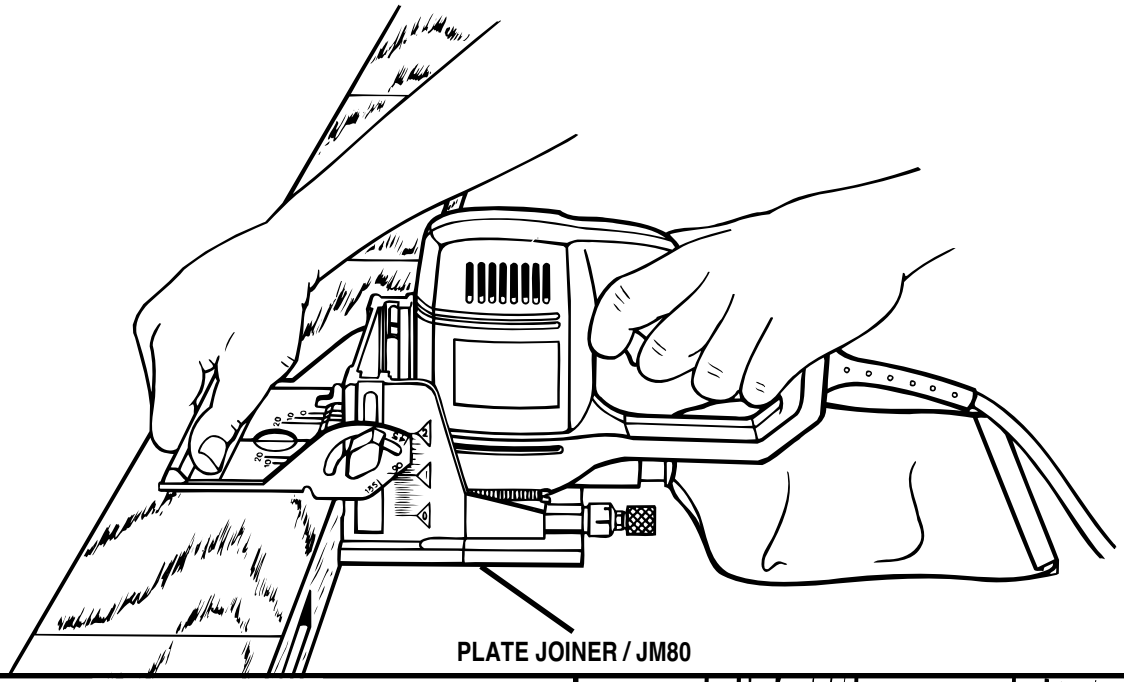
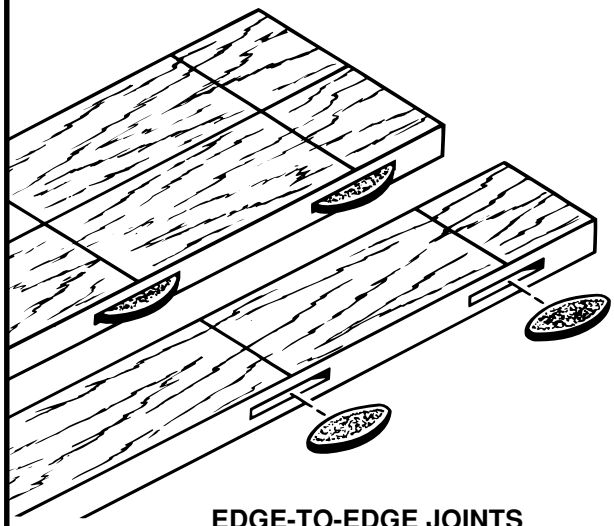
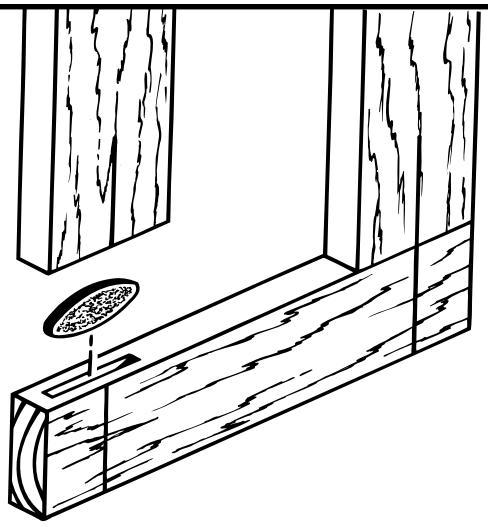


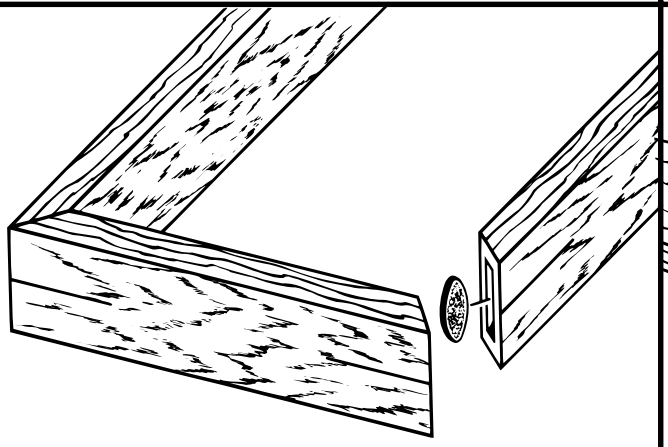
PLATE JOINER / JM80



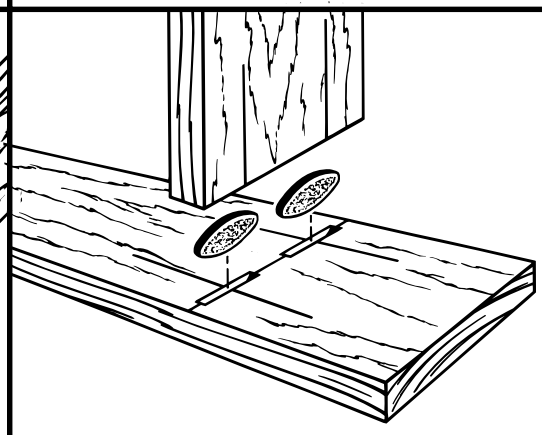
EDGE-TO-EDGE JOINTS



BUTT JOINTS



MITER JOINTS



T- JOINT

RULES FOR SAFE OPERATION

THE PURPOSE OF SAFETY SYMBOLS IS TO ATTRACT YOUR ATTENTION TO POSSIBLE DANGERS. THE SAFETY SYMBOLS, AND THE EXPLANATIONS WITH THEM, DESERVE YOUR CAREFUL ATTENTION AND UNDERSTANDING. THE SAFETY WARNINGS DO NOT BY THEMSELVES ELIMINATE ANY DANGER. THE INSTRUCTIONS OR WARNINGS THEY GIVE ARE NOT SUBSTITUTES FOR PROPER ACCIDENT PREVENTION MEASURES.

SYMBOL	MEANING
⚠	**SAFETY ALERT SYMBOL:** Indicates caution or warning. May be used in conjunction with other symbols or pictographs.
⚠	**WARNING:** Failure to obey a safety warning can result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.
⚠	**CAUTION:** Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

DOUBLE INSULATION

Your Ryobi power tool is double insulated. This means you are separated from the tool's electrical system by two complete sets of electrical insulation. This extra layer of insulation is intended to protect the user from electrical shock due to a break in the wiring insulation. All exposed metal parts are isolated from the internal metal motor components with protecting insulation. Double insulated tools do not need to be grounded.

IMPORTANT

Servicing of a tool with double insulation requires extreme care and knowledge of the system and should be performed only by a qualified service technician. For service we suggest you return the tool to your nearest Ryobi **AUTHORIZED SERVICE ORGANIZATION** for repair. When servicing use only identical Ryobi replacement parts.

⚠ WARNING:

The double insulated system is intended to protect the user from shock resulting from a break in the tool's internal wiring. Observe all normal safety precautions related to avoiding electrical shock.

⚠ WARNING:

Do not attempt to operate this tool until you have read thoroughly and understand completely all instructions, safety rules, etc. contained in this manual. Failure to comply can result in accidents involving fire, electric shock, or serious personal injury. Save owner's manual and review frequently for continuing safe operation, and instructing others who may use this tool.

⚠ WARNING:

The operation of any plate joiner can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning power tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields.

⚠ **Look for this symbol to point out important safety precautions. It means attention!!! Your safety is involved.**

READ ALL INSTRUCTIONS

1. **KNOW YOUR POWER TOOL -** Read owner's manual carefully. Learn its applications and limitations as well as the specific potential hazards related to this tool.
2. **GUARD AGAINST ELECTRICAL SHOCK BY PREVENTING BODY CONTACT WITH GROUNDED SURFACES.** For example: Pipes, radiators, ranges, refrigerator enclosures.
3. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **AVOID DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations or expose to rain. Keep work area well lit.
5. **KEEP CHILDREN AND VISITORS AWAY.** All visitors should wear safety glasses and be kept a safe distance from work area. Do not let visitors contact tool or extension cord.
6. **STORE IDLE TOOLS.** When not in use tools should be stored in a dry, high or locked-up place – out of the reach of children.
7. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy duty tool. Don't use tool for purpose not intended – for example – Don't use a circular saw for cutting tree limbs or logs.
9. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid footwear are recommended when working outdoors. Also, wear protective hair covering to contain long hair and keep it from being drawn into air vents.
10. **ALWAYS WEAR SAFETY GLASSES WITH SIDE SHIELDS**. Everyday eyeglasses have only impact resistant lenses; they are **NOT** safety glasses.
11. **PROTECT YOUR LUNGS.** Wear a face or dust mask if operation is dusty.
12. **PROTECT YOUR HEARING.** Wear hearing protection during extended periods of operation.
13. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect from receptacle. Keep cord from heat, oil, and sharp edges.
14. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand and it frees both hands to operate tool.
15. **DON'T OVERREACH.** Keep proper footing and balance at all times. Do not use on a ladder or unstable support.
16. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp at all times, and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
17. **DISCONNECT TOOLS.** When not in use, before servicing, or when changing attachments, blades, bits, cutters, etc., all tools should be disconnected.
18. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.
19. **AVOID ACCIDENTAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.
20. **MAKE SURE YOUR EXTENSION CORD IS IN GOOD CONDITION.** When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A wire gage size (A.W.G.) of at least 12 is recommended for an extension cord 100 feet or less in length. A cord exceeding 100 feet is not recommended. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
21. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors. Outdoor approved cords are marked with the suffix W-A, for example - SJTW-A or SJOW-A.
22. **KEEP BLADES CLEAN AND SHARP.** Sharp blades minimize stalling and kickback.
23. **KEEP HANDS AWAY FROM CUTTING AREA.** Keep hands away from blades. Do not reach underneath work while blade is rotating. **WARNING: BLADES COAST AFTER TURN OFF.**

RULES FOR SAFE OPERATION (Continued)

24. **NEVER USE IN AN EXPLOSIVE ATMOSPHERE.** Normal sparking of the motor could ignite flammable liquids, gases, or fumes.
25. **INSPECT TOOL CORDS PERIODICALLY** and if damaged, have repaired by an authorized service facility. Stay constantly aware of cord location and keep it well away from the rotating blade.
26. **INSPECT EXTENSION CORDS PERIODICALLY** and replace if damaged.
27. **KEEP HANDLES DRY, CLEAN, AND FREE FROM OIL AND GREASE.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any strong solvents to clean your tool.
28. **STAY ALERT AND EXERCISE CONTROL.** Watch what you are doing and use common sense. Do not operate tool when you are tired. Do not rush.
29. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced by an authorized service center.
30. **DO NOT USE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF.** Have switches replaced by an authorized service center.
31. **DO NOT OPERATE THIS TOOL WHILE UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR ANY MEDICATION.**
32. **GUARD AGAINST KICKBACK.** Kickback occurs when the blade stalls rapidly and the plate joiner is driven in the direction opposite blade rotation. Release switch immediately if blade binds or joiner stalls.
33. **USE ONLY 4 INCH DIAMETER SPECIFIED BLADES.** Do not use blades with incorrect size holes. Never use blade washers or bolts that are defective, incorrect, or not specified.
34. **AVOID CUTTING NAILS.** Inspect for and remove all nails from lumber before cutting.
35. **NEVER** touch the blade or other moving parts during use.
36. **NEVER** start a tool when the blade is in contact with the workpiece.
37. **NEVER** lay a tool down before the blade has come to a complete stop.
38. **POLARIZED PLUGS.** To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.
39. **WHEN SERVICING USE ONLY IDENTICAL RYOBI REPLACEMENT PARTS.**
40. **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use them to instruct others who may use this tool. If you loan someone this tool, loan them these instructions also.

⚠ WARNING:

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

SAVE THESE INSTRUCTIONS

FEATURES

Your Plate Joiner has been designed for making fast, accurate, and simple plunge cuts in wood, etc. so that biscuits can be used to join two or more boards together. When used properly and only for what it is intended, this versatile tool will give you years of trouble-free performance. It is professionally engineered, but its ease of operation allows the amateur to produce work that is beautiful and precise.

SWITCH

To turn your plate joiner **ON**, depress the switch trigger. Release switch trigger to turn your plate joiner **OFF**.

MOTOR

Your plate joiner has a powerful motor with sufficient power to handle tough cutting jobs. It develops a no load speed of 10,000 RPM.

CARBIDE TIPPED BLADE

Your plate joiner has an 8 tooth carbide tipped blade for cutting biscuit slots.

BISCUITS

See Figure 1.

Biscuits are available in three standard sizes:

#0 (5/8 in. x 1-13/16 in.)

#10 (13/16 in. x 2-1/16 in.)

#20 (15/16 in. x 2-5/16 in.)

NOTE: Biscuits swell rapidly upon contact with water-based woodworking glues.

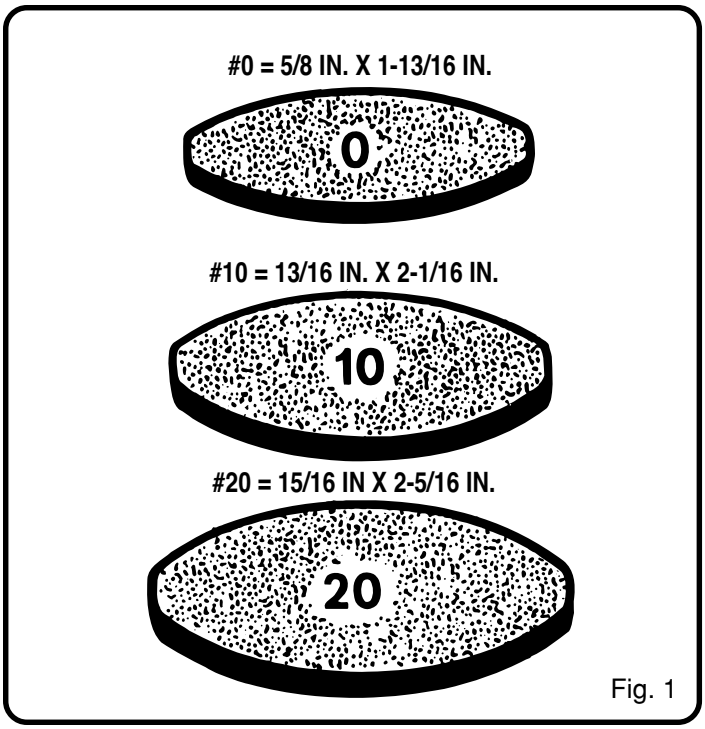


Fig. 1

ADJUSTABLE FENCE / FRONT HANDLE

Your plate joiner has an adjustable fence. By loosening the height adjustment knobs, the angle of the fence can be set at angles from 0° to 135°, with positive stop settings in increments of 45°. The height of the fence can be set between 0 in. - 2 in. with a scale showing 0 in. - 1-1/2 in.

The front handle is part of the adjustable fence and should always be used to guide and balance your plate joiner, providing ease of operation and maintaining safe control.

NON-SKID BACKING PAD

The fence on your plate joiner is padded with a non-skid backing pad to hold it stationary against the workpiece. It helps prevent skidding when making cuts. It also prevents marring of the workpiece from your plate joiner when making cuts.

APPLICATIONS

(Use only for the purpose listed below)

1. Cutting precise mating oval slots in hard wood, soft wood, plywood, particle board, etc. for spline joinery applications.

ELECTRICAL CONNECTION

Your plate joiner has a precision built electric motor. It should be connected to a **power supply that is 120 volts, 60 Hz, AC only (normal household current).** Do not operate this tool on direct current (DC). A voltage drop of more than 10 percent will cause a loss of power and overheating. If your plate joiner does not operate when plugged into an outlet, double-check the power supply.

DEPTH ADJUSTMENT KNOB

A spring loaded depth adjustment knob makes it possible to make proper settings for three standard size biscuits. Fine adjustments to the cutting depth can be made with a knurled adjustment knob and jam nut located behind the depth adjustment knob. Once the correct depth setting has been made for one biscuit size, the other two depth settings will be automatically set.

DUSTLESS FEATURE

The dust bag provides a dust collection system. Wood particles are drawn up through a tunnel in the base and collect in the dust bag during cutting operations.

INDICATOR MARKS

Centerline and line of cut indicator marks have been provided on your plate joiner. *See Figure 2.*

⚠ WARNING:

Your plate joiner should never be connected to power supply when you are assembling parts, making adjustments, assembling or removing blades, cleaning or when not in use. Disconnecting your plate joiner will prevent accidental starting that could cause serious personal injury.

FEATURES

KNOW YOUR PLATE JOINER

See Figure 2.

Except for the dust bag, your plate joiner has been shipped completely assembled and ready for use. An owner's manual and warranty registration are also included. Inspect your new plate joiner carefully to make sure no breakage or damage has occurred during shipping. If any parts are damaged or missing, contact your local Ryobi factory or authorized service center to obtain replacement parts before attempting to operate your plate joiner.

The dust bag is easily installed on the rear of your tool. Its use will help keep the work area clean. Install dust bag by inserting the dust bag adaptor inside the blower exhaust on your plate joiner. For most efficient pick-up of wood particles, empty dust bag often.

Before attempting to use any tool familiarize yourself with all operating features and safety requirements.

⚠ WARNING:

Do not attempt to modify this tool or create accessories not recommended for use with this tool. Any such alteration or modification is misuse and could result in a hazardous condition leading to possible serious personal injury.

⚠ WARNING:

Do not allow familiarity with tools to make you careless. Remember that a careless fraction of a second is sufficient to inflict severe injury.

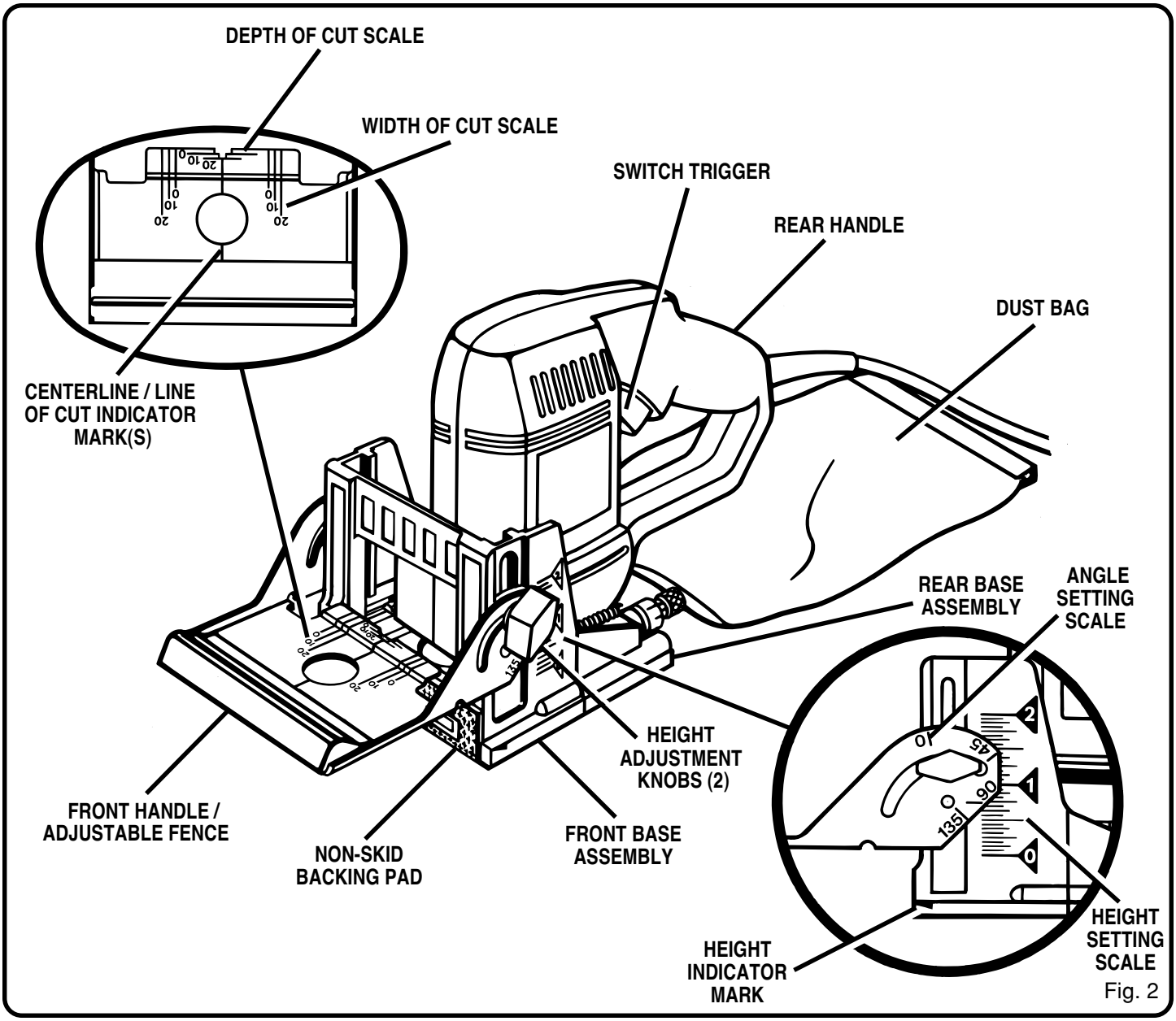


Fig. 2

ADJUSTMENTS

⚠ WARNING:

If any parts are missing, do not operate tool until the missing parts are replaced. Failure to do so could result in possible serious personal injury.

DEPTH OF CUT ADJUSTMENTS

Your plate joiner can be adjusted to three standard cutting depths to accommodate three standard size biscuits — #0, #10, and #20. Adjustments are made by engaging slots on depth adjustment knob with tabs on rear base assembly. For example, when using a #0 size biscuit, rotate the depth adjustment knob to the slot marked 0. When using a #10 size biscuit, rotate the depth adjustment knob to the slot marked 10, and when using a #20 size biscuit rotate the depth adjustment knob to the slot marked 20. *See Figure 3.*

TO SET DEPTH ADJUSTMENT KNOB

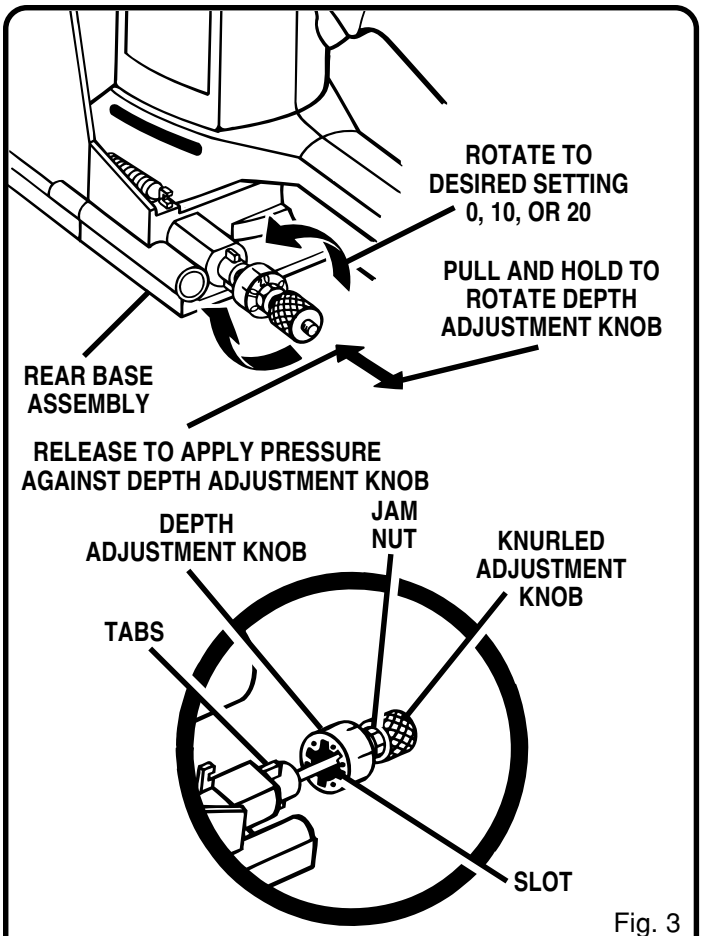
1. **Unplug your plate joiner.**

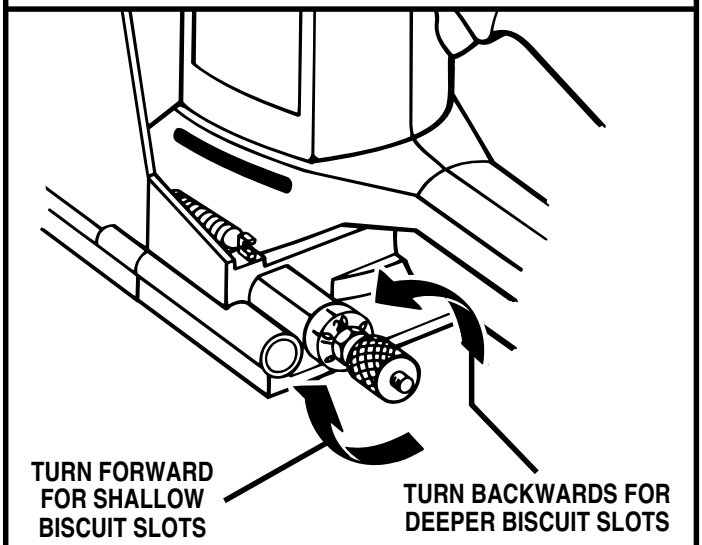
⚠ WARNING:

Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Pull knurled adjustment knob and jam nut in the direction of the arrow shown in figure 3. **NOTE:** Knob and jam nut are spring loaded, therefore pulling them in the direction of the arrow shown puts pressure on the spring and releases pressure from the depth adjustment knob.
3. Rotate depth adjustment knob until desired slot setting aligns with tabs on rear base assembly — 0, 10, or 20.
4. Next release knurled adjustment knob and jam nut applying pressure from spring on depth adjustment knob.

Make a test cut in a scrap piece of wood. Fit the correct size biscuit into biscuit slot. If biscuit slot is too deep or too shallow, fine adjustments to the depth setting can be made by loosening knurled adjustment knob and making fine adjustments with the jam nut. Turning jam nut forward will cut shallow biscuit slots. Turning jam nut backwards will cut deeper biscuit slots. The biscuit slot should be deep enough to allow slightly more than one-half of the biscuit into the slot. This extra room allows for proper alignment of the wood being joined.


ROTATE TO DESIRED SETTING 0, 10, OR 20
PULL AND HOLD TO ROTATE DEPTH ADJUSTMENT KNOB
REAR BASE ASSEMBLY
RELEASE TO APPLY PRESSURE AGAINST DEPTH ADJUSTMENT KNOB
DEPTH ADJUSTMENT KNOB
JAM NUT
KNURLED ADJUSTMENT KNOB
TABS
SLOT
Fig. 3



KNURLED ADJUSTMENT KNOB USED AS A LOCK NUT.
JAM NUT USED TO MAKE FINE ADJUSTMENTS.
Fig. 4

TO MAKE FINE ADJUSTMENTS

See Figure 4.

1. **Unplug your plate joiner.**
2. Loosen knurled adjustment knob. This knob is used as a lock nut only. Loosen by twisting it in the opposite direction away from jam nut.
3. Turn jam nut forward for a more shallow cut, or backwards for a deeper cut.
4. Once desired depth of cut is reached, hold jam nut so that it will not move out of adjustment. Next, tighten knurled adjustment knob against jam nut.
5. Recheck depth setting by making a test cut in a scrap piece of wood. Also periodically check depth setting for accuracy. *See Figure 4.*

ADJUSTMENTS

FENCE HEIGHT ADJUSTMENT

See Figure 5.

The adjustable fence on your plate joiner can be moved up and down to adjust the position of the blade in relation to the top of the workpiece. A scale on both sides of the fence indicates the height of the fence from the center of the blade. The fence can be positioned up to two inches from the center of the blade. However, the scale and indicator point can only be set up to 1-1/2 in. from the center of the blade. Scale marks are in increments of 1/16 in.

TO ADJUST HEIGHT SETTING

See Figure 5.

1. **Unplug your plate joiner.**

> **⚠ WARNING:**
>
> Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Loosen the two height adjustment knobs. **NOTE:** Loosen each height adjustment knob approximately one turn.
3. Slide the fence up or down until the indicator point is aligned with the desired dimension on the scale.
4. Tighten height adjustment knobs securely.

FENCE ANGLE ADJUSTMENT

See Figure 6.

The adjustable fence on your plate joiner can be set at angles ranging from 0° to 135°, with quick, accurate positive stops set in 45° increments. A scale is located on both sides of the front handle for identifying these positive stop angles. Each click you hear when rotating the adjustable fence from one angle setting to another equals a 45° positive stop angle change.

TO ADJUST ANGLE SETTING

See Figure 6.

1. **Unplug your plate joiner.**

> **⚠ WARNING:**
>
> Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Loosen the two height adjustment knobs. **NOTE:** Loosen each height adjustment knob approximately one turn.
3. Rotate adjustable fence up or down to the desired angle.
4. Tighten height adjustment knobs securely. *See Figure 6.*

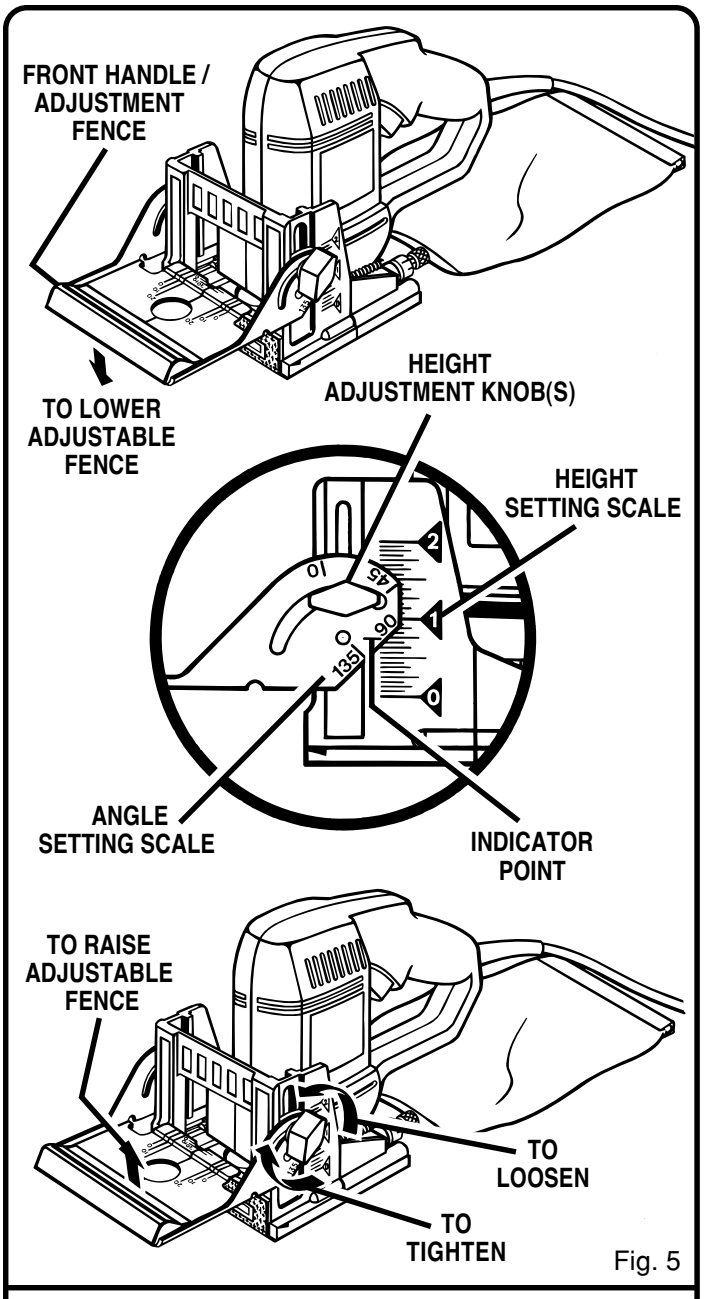


Fig. 5

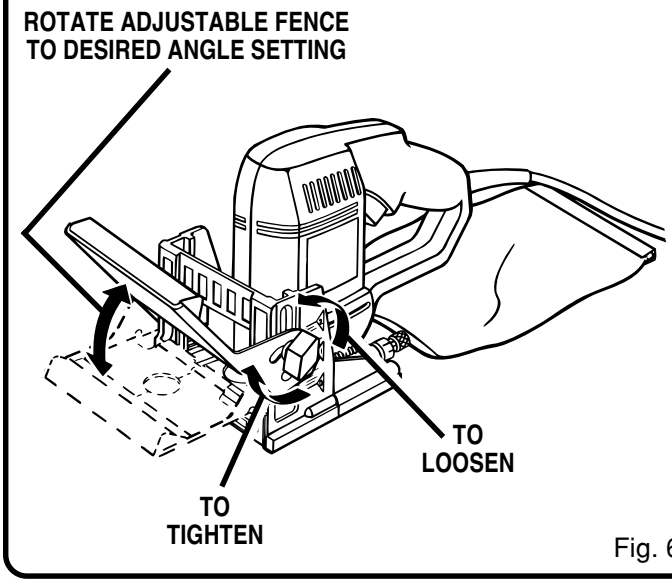


Fig. 6

OPERATION

⚠ WARNING:

Always wear safety goggles or safety glasses with side shields when operating tools. Failure to do so could result in objects being thrown into your eyes, resulting in possible serious injury.

A variety of spline joints can be made using your plate joiner. The number and size biscuits needed for each joint depends on the thickness of the wood and the length of the joint. In general, the small #0 biscuits should be used for miter cuts in 3/4 in. materials. The larger biscuits should be used for edge-to-edge joinery.

When joining 1-1/2 in. thick materials, stack two biscuits, one above the other. For example, joining 2 in. x 4 in. dressed lumber. *See Figure 9.* When joining even thicker materials, use additional biscuits, stacked above each other.

When making edge-to-edge joints for tabletops, workbenches, cutting boards, etc. the more biscuits you use, the stronger the joint will be.

The following sections illustrate how to make various spline joints using your plate joiner.

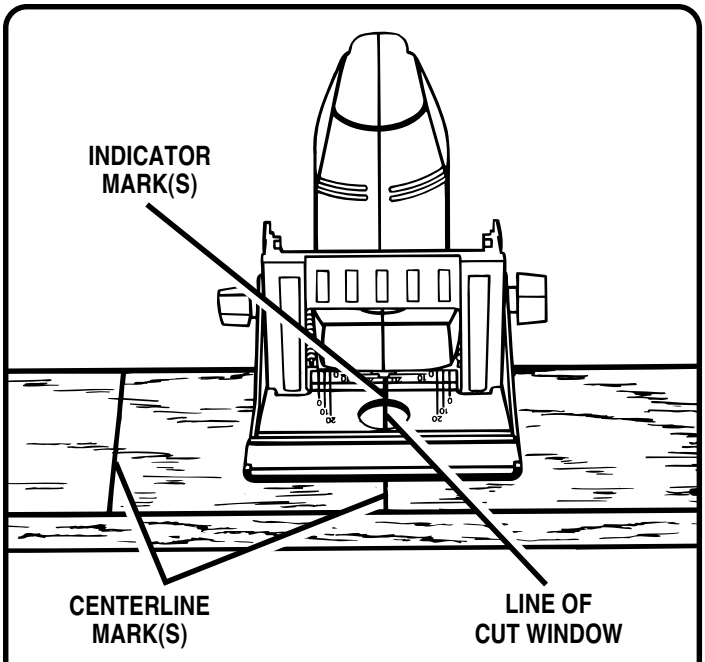
EDGE-TO-EDGE JOINTS

See Figures 7 and 8.

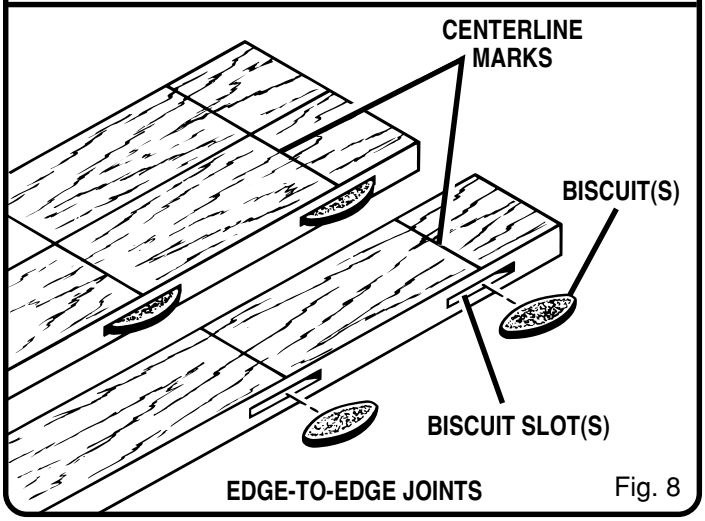
Edge-to-edge joinery is one of the most basic and easiest joints to construct. In general, two basic adjustments have to be made for all biscuit joinery applications. One is the depth of cut and the other is the location of the cut.

HOW TO MAKE EDGE-TO-EDGE JOINTS

1. **Unplug your plate joiner.**
2. Prepare the workpieces by laying them side by side on a workbench in the order in which they will be assembled.
3. Using a square, determine the location of each biscuit spline joint and mark the center of each joint by drawing a line across each workpiece. **NOTE:** Mark the edges 2 in. from the ends of workpieces. The joint will be stronger if you use multiple biscuits placed close together.
4. Loosen height adjustment knobs and set fence angle at 90°.
5. Slide the fence up or down until the indicator point is aligned with the desired dimension on the scale. **REMEMBER:** The scale indicates the height of the fence from the center of the blade.
6. Tighten height adjustment knobs securely.
7. Select the correct depth of cut setting to match the biscuit size you are planning to use. We suggest that you make a test cut in a scrap piece of wood from the same workpiece if possible.
8. Clamp workpiece securely so that it will not move during the cut.
9. Plug your plate joiner into power supply and prepare to make your first cut. Grasp and hold your plate joiner securely with both hands by the front and rear handles as shown on page 3.



TOP VIEW OF PLATE JOINER Fig. 7



EDGE-TO-EDGE JOINTS Fig. 8

10. Place the fence against the board and align the indicator marks on the fence with the centerline mark(s) on the board. *See Figure 7.*
11. Depress the switch trigger to turn the power on your plate joiner, then push it forward to extend the blade into the wood.
12. When the base assembly bottoms out against the depth of cut adjustment knob setting, pull back releasing pressure on the spring. Blade will retract from biscuit slot.
13. Repeat this procedure for all desired biscuit slots.
14. Once all biscuit slots have been cut, place a biscuit in each joint and dry assemble the workpieces. Make sure each joint lines up and fits.
15. Finally, disassemble the workpieces and place a bead of glue in each slot. Also, spread a bead of glue over the entire surface of the joint. Reinsert the biscuits and assemble the workpieces. *See Figure 8.*
16. Clamp workpieces together until the glue sets up.

OPERATION

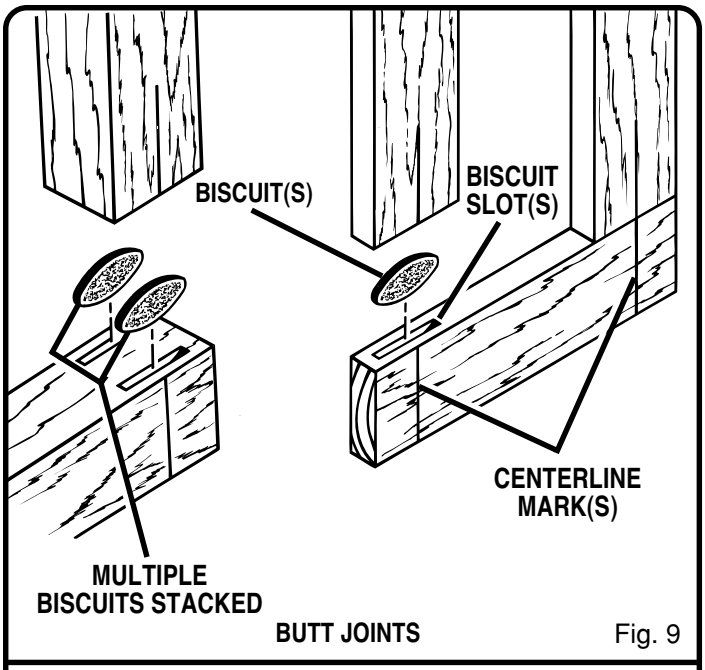
BUTT JOINTS

See Figure 9.

A butt joint is one of the weakest joints in woodworking. This type of joint is mating the end grain of one board with the edge grain of another. The bonding of glue on this type of surface is poor. However, by using biscuits you can create a very strong joint that gives a mortise-and-tenon effect.

HOW TO MAKE BUTT JOINTS

1. **Unplug your plate joiner.**
2. Place the two pieces of wood to be joined on a level workbench. Align them against each other in the arrangement in which they will be assembled.
3. Using a square, determine the location of each biscuit spline joint and mark the center of each joint by drawing a line across the edges of the two boards.
4. Loosen height adjustment knobs and set fence angle at 90°.
5. Slide the fence up or down until the indicator point is aligned with the desired dimension on the scale. **REMEMBER:** The scale indicates the height of the fence from the center of the blade.
6. Tighten height adjustment knobs securely.
7. Select the correct depth of cut setting to match the biscuit size you are planning to use. We suggest that you make a test cut in a scrap piece of wood from the same workpiece if possible.
8. Clamp workpiece securely so that it will not move during the cut.
9. Plug your plate joiner into power supply and prepare to make your first cut. Grasp and hold your plate joiner securely with both hands by the front and rear handles.
10. Place the fence against the board and align the indicator marks on the fence with the centerline mark(s) on the board.
11. Depress the switch trigger to turn the power on your plate joiner, then push it forward to extend the blade into the wood.
12. When the base assembly bottoms out against the depth of cut adjustment knob setting, pull back releasing pressure on the spring. Blade will retract from biscuit slot.
13. Repeat this procedure for cutting the slot in the mating workpiece.
14. Once all biscuit slots have been cut, place a biscuit in each joint and dry assemble the workpieces. Make sure each joint lines up and fits.
15. Finally, disassemble the workpieces and place a bead of glue in each slot. Also, spread a bead of glue over the entire surface of the joint. Reinsert the biscuits and assemble the workpieces. *See Figure 9.*
16. Clamp workpieces together until the glue sets up.



BUTT JOINTS Fig. 9

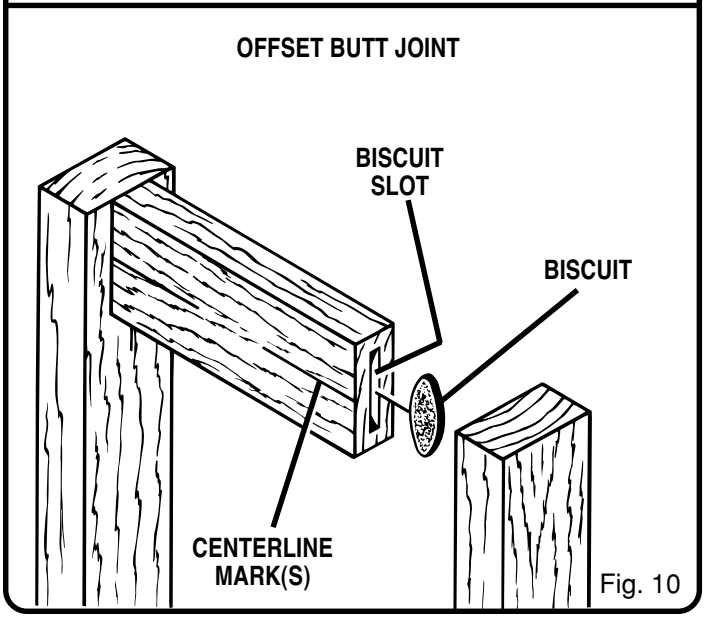


Fig. 10

OFFSET BUTT JOINTS

See Figure 10.

The rails of a table or workbench are often offset from the front of the table legs. When offsets are required, it is necessary to cut the slots in the rails first, then re-adjust the fence to cut the slots in the legs.

Keeping this one exception in mind, the procedure for cutting offset butt joints is identical to the procedure for cutting butt joints.

For example — If a 1/4 in. offset is desired, you would mark the centerlines for cutting a butt joint as mentioned in the procedures for cutting butt joints, and cut the slots in the ends of the rails. Next you would raise the fence 1/4 in. to the desired offset and cut the slots in the legs.

OPERATION

T- JOINTS

See Figures 11-15.

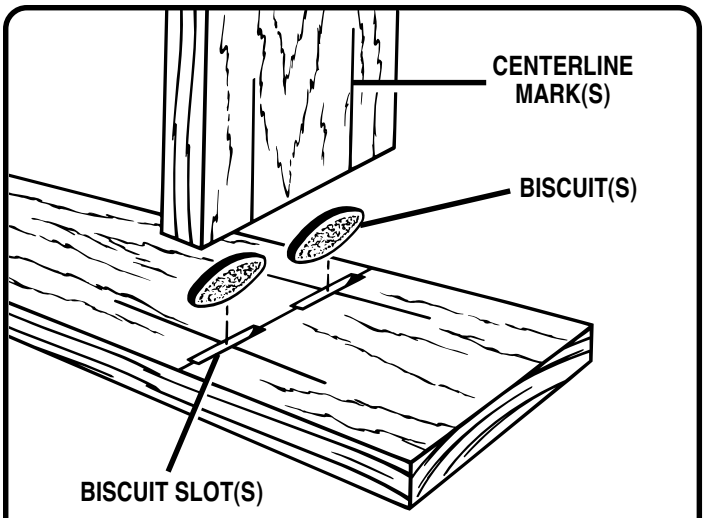
A T-joint is used when the end of a board is joined to the face of another board as shown in figure 11. Attaching shelves to bookcases and inner support braces to frames are typical applications. Actual cutting of a T-joint is as simple as any other cut. However, it is critical that you mark the centerlines, mark the intersection points for each slot, and cut each slot correctly. *See Figure 11.*

HOW TO MAKE T- JOINTS

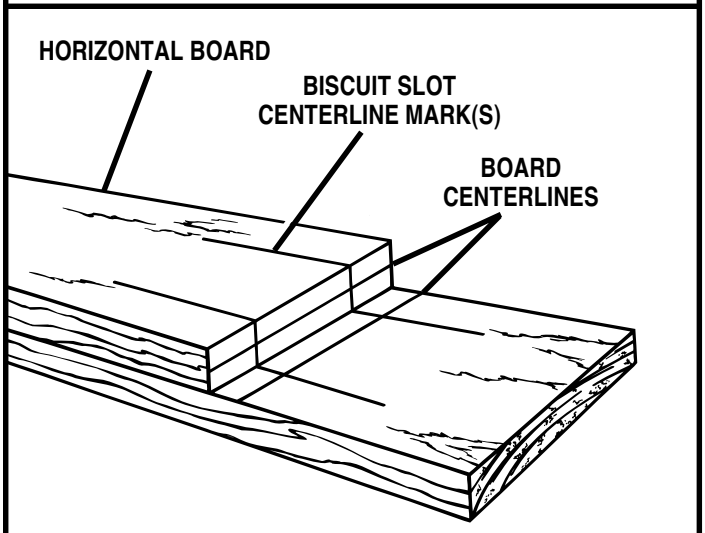
1. **Unplug your plate joiner.**
2. Place the two pieces of wood to be joined on a level workbench as shown in figure 12. The inside face of the vertical board should be facing up.
3. Determine the location of each biscuit joint and mark the centerlines on each board as shown. The centerlines for both boards must line-up with each other. Measure carefully, these measurements must be accurate and precise. **TIP:** Measure twice and cut once. In addition to the centerlines lining up, the spacing of the biscuit slots from side-to-side must also match.
4. Plug your plate joiner into power supply and cut slots in all boards that require end slots. *See Figure 13.* Follow procedures explained in **"Edge-To-Edge Joints"**. Set fence angle at 90°, set fence height at desired dimension on the scale, select the correct depth of cut setting for the biscuit size you plan to use, clamp workpiece securely, then cut each slot at the marked centerline intersection.
5. Next, you must adjust the fence on your plate joiner in order to cut slots into the face of the vertical board.

TO ADJUST FENCE:

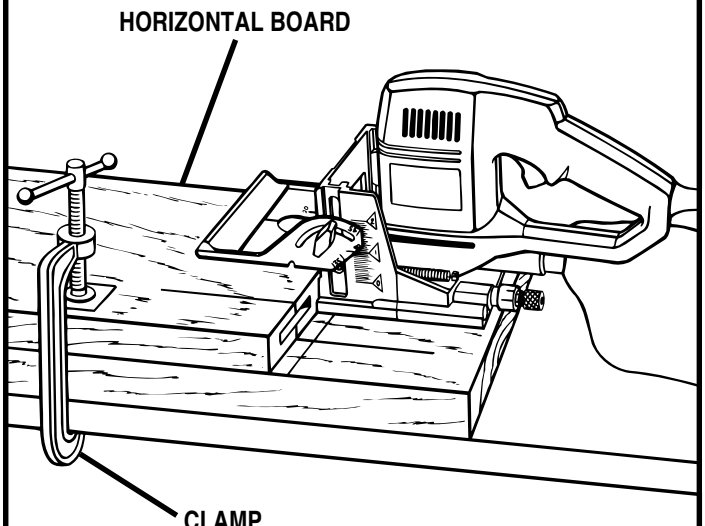
6. **Unplug your plate joiner.**
7. Loosen height adjusting knobs and set fence angle at 0°, set fence height at desired dimension on the scale then retighten height adjustment knobs securely. *See Figure 14.* Next, select the correct depth of cut setting for the biscuit size you plan to use, clamp workpiece securely, and cut each slot at the marked centerline intersection.
8. Place your plate joiner on vertical board as shown in figure 15 and align indicator marks on base assembly with centerline on vertical board.
9. Place a straight piece of wood on the vertical board and securely clamp it flush against the base assembly. This piece of wood is used for a fence or guide. It must be square with the sides of the vertical board and parallel with the centerline.
10. Align centerline on bottom of base assembly with marked intersection for biscuit slot.
11. Plug your plate joiner into power supply and prepare to cut slot.
12. Depress the switch trigger to turn the power on your plate joiner, then push it down to extend the blade into the wood.
13. When the base assembly bottoms out against the depth of cut adjustment knob setting, pull back releasing pressure on the spring. Blade will retract from biscuit slot.



T- JOINT Fig. 11



VERTICAL BOARD Fig. 12



TO CUT END SLOTS IN HORIZONTAL BOARDS Fig. 13

OPERATION

T-JOINTS (Continued)

14. Repeat this procedure for cutting all required slots in vertical boards.
15. Once all slots have been cut, place a biscuit in each joint and dry assemble the workpieces. Make sure each joint lines up and fits.
16. Finally, disassemble the workpieces and place a bead of glue in each slot. Also, spread a bead of glue over the entire surface of the joint. Reinsert the biscuits and assemble the workpieces. *See Figure 11.*
17. Clamp workpieces together until the glue sets up.

MITER JOINTS

See Figures16-19.

There are two types of miter joints that can be made using biscuits: flat miters and edge miters. Flat miters are used when making picture frames. Edge miters are used when making boxes or things where you don't want to show the end grain of the wood. **NOTE:** Butt joints show the end grain in wood.

HOW TO MAKE FLAT MITER JOINTS

1. **Unplug your plate joiner.**

> **⚠ WARNING:**
>
> Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Place the pieces of wood to be joined on a level workbench as shown in figure 16.
3. Using a combination square, draw a line through the center of each joint perpendicular to the mitered edges.
4. Set fence angle at 90°, set fence height at desired dimension on the scale, select the correct depth of cut setting for the biscuit size you plan to use, and clamp workpiece securely.
5. Align indicator mark on fence with the centerline on the workpiece.
6. Plug your plate joiner into power supply and prepare to cut slot.
7. Depress the switch trigger to turn the power on your plate joiner, then push it forward to extend the blade into the wood.
8. When the base assembly bottoms out against the depth of cut adjustment knob setting, pull back releasing pressure on the spring. Blade will retract from biscuit slot.
9. Repeat this procedure for cutting mating slot and all required miter joint slots.
10. Once all slots have been cut, place a biscuit in each joint and dry assemble the workpieces. Make sure each joint lines up and fits.
11. Finally, disassemble the workpieces and place a bead of glue in each slot. Also, spread a bead of glue over the entire surface of the joint. Reinsert the biscuits and assemble the workpieces. *See Figure 16.*
12. Clamp workpieces together until the glue sets up.

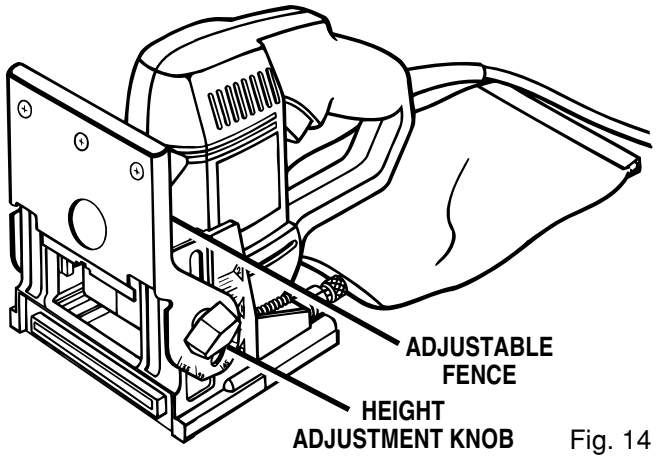
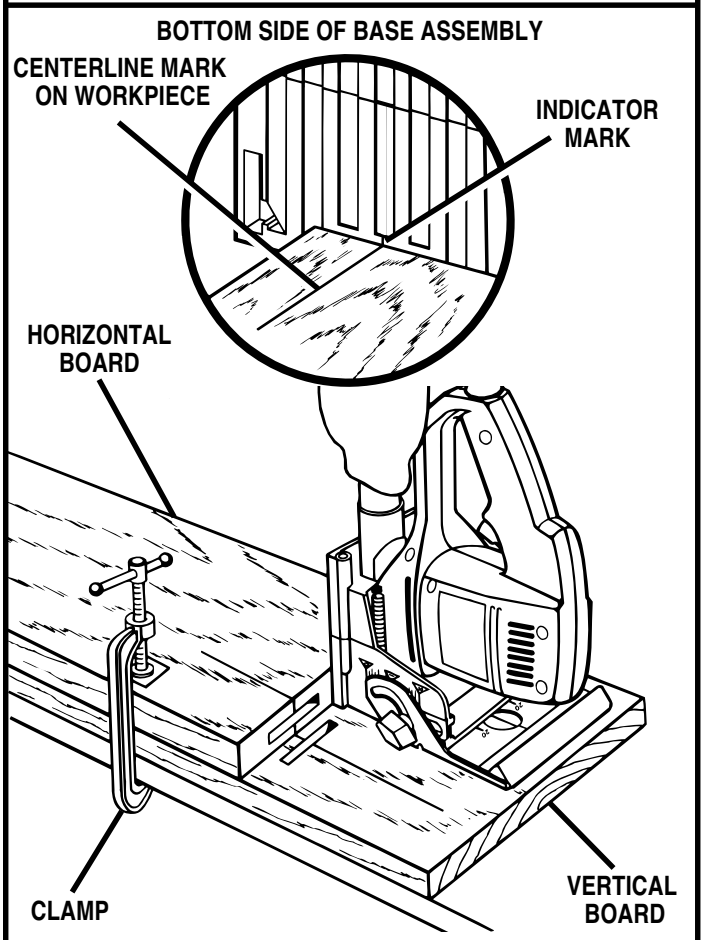
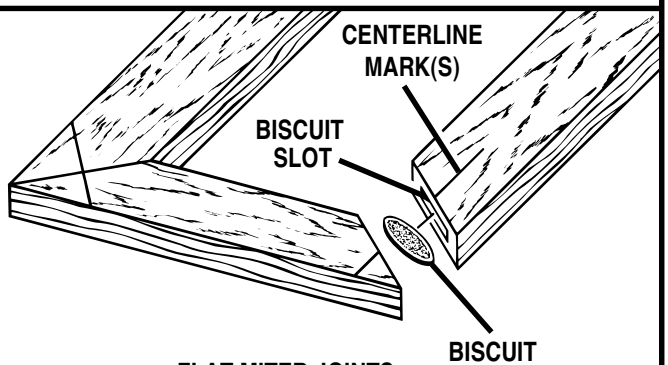


Fig. 14



TO CUT SLOTS IN VERTICAL BOARDS
Fig. 15



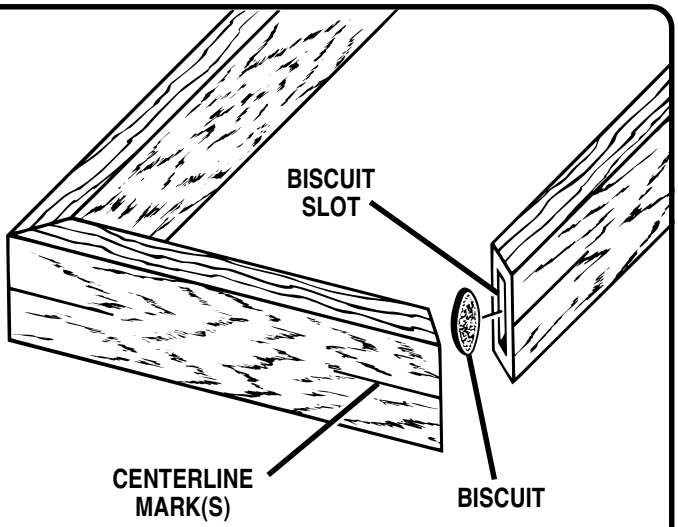
FLAT MITER JOINTS
Fig. 16

OPERATION

HOW TO MAKE EDGE MITER JOINTS

1. **Unplug your plate joiner.**
2. Place the pieces of wood to be joined on a level workbench as shown in figure 17.
3. Mark centerline of the joint on each board.
4. When making edge miter joints with workpieces that have different thicknesses, clamp securely to a workbench with the long sides up. This will assure that the outside surfaces will match. *See Figure 18.*
5. Loosen height adjusting knobs and set fence angle at 135°.
6. Slide the fence up or down until fence height is at desired setting.
7. Tighten height adjustment knobs securely.
8. Place your plate joiner on workpiece with the adjustable fence resting on the long side of workpiece as shown in figure 18. The base or vertical fence should be against the mitered edge of the workpiece.
9. Recheck fence height setting to make sure it will not cut through the workpiece.
10. Align indicator mark on fence with the centerline on the workpiece. Make sure the base or vertical fence is pressed flat against the mitered edge of the workpiece.
11. Plug your plate joiner into power supply and prepare to cut slot.
12. Depress the switch trigger to turn the power on your plate joiner, then push it forward to extend the blade into the wood.
13. When the base assembly bottoms out against the depth of cut adjustment knob setting, pull back releasing pressure on the spring. Blade will retract from biscuit slot.
14. Repeat this procedure for cutting mating slot and all required miter joint slots.
15. Once all slots have been cut, place a biscuit in each joint and dry assemble the workpieces. Make sure each joint lines up and fits.
16. Finally, disassemble workpieces and place a bead of glue in each slot. Also, spread a bead of glue over the entire surface of the joint. Reinsert the biscuits and assemble workpieces. *See Figure 17.*
17. Clamp workpieces together until the glue sets up.

If the workpieces are the same thickness, clamp securely to a workbench with the short sides up. *See Figure 19.* Set fence angle at 45°. Place your plate joiner on the workpiece with the adjustable fence resting on the short side of the workpiece and the base or vertical fence against the mitered edge of the workpiece. Follow steps 9-17 above to cut required slots. **REMEMBER:** Before cutting slots, make sure blade will not cut through the workpiece and that both the vertical and horizontal fences are pressed flat against the mitered edge and face of the workpiece.



EDGE MITER JOINTS Fig. 17

CUTTING EDGE MITER SLOT FROM LONG SIDE OF WORKPIECE

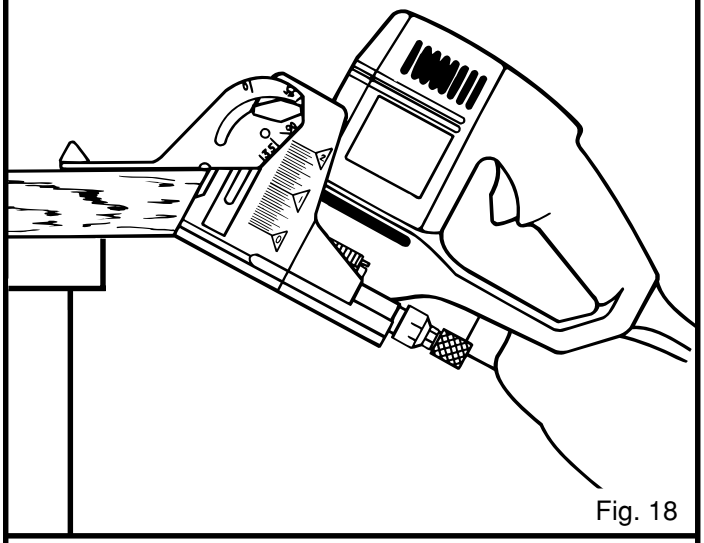


Fig. 18

CUTTING EDGE MITER SLOT FROM SHORT SIDE OF WORKPIECE

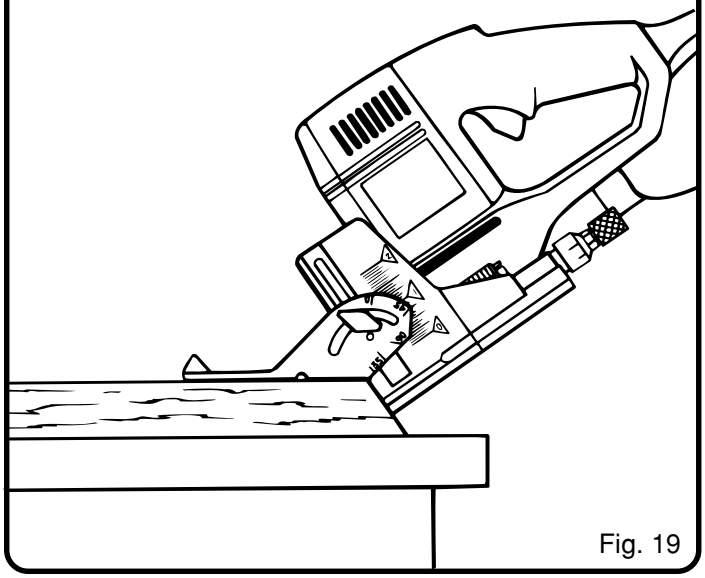


Fig. 19

OPERATION

DUSTLESS FEATURE

See Figure 20.

The dust bag located on the rear of your plate joiner provides a dust collection system. Wood particles are drawn up through a tunnel in the base and collect in the dust bag during cutting operations. For more efficient operation, empty dust bag when half full.

Do not connect plate joiner to power supply before installing dust bag.

⚠ WARNING:

To prevent the possibility of sawdust or foreign objects being thrown into your face and eyes, never attempt to use your plate joiner without dust bag properly installed. Sawdust or foreign objects being thrown into your face and eyes could result in possible serious injury.

TO INSTALL DUST BAG

The dust bag can be installed by inserting the dust bag adaptor inside the blower exhaust. *See Figure 20.*

TO EMPTY DUST BAG

Remove dust bag from plate joiner, remove retainer strip and shake out dust. Occasionally turn the dust bag inside out and brush the accumulation of dust from the inside of the bag. This will permit the air to flow through the bag better.

HELPFUL HINTS

- ✓ Always clamp workpiece securely before cutting.
- ✓ A safe operator is one who thinks ahead.
- ✓ Always wear eye protection when cutting slots.
- ✓ Make set-up adjustments carefully. Then double check. Measure twice and cut once.
- ✓ Always dry assemble your project before gluing it together.
- ✓ The more biscuits used, the stronger the joint will be.
- ✓ Keep blade clean and properly sharpened.
- ✓ Don't let familiarity make you careless.
- ✓ Study all safety rules and do the job safely.
- ✓ **NEVER** place your hands in jeopardy.
- ✓ Make certain clamps can't loosen while in use.
- ✓ Test difficult set-ups on scrap—Don't waste lumber.
- ✓ Plan each operation before you begin.
- ✓ Provide for smoother operation by cleaning your plate joiner frequently. Shake plate joiner or blow with an air jet to remove wood particle build-up.
- ✓ Empty dust bag when half full.
- ✓ **DO NOT ABUSE POWER TOOLS.** Abusive practices can damage tool as well as workpiece.
- ✓ **THINK SAFETY BY THINKING AHEAD.**

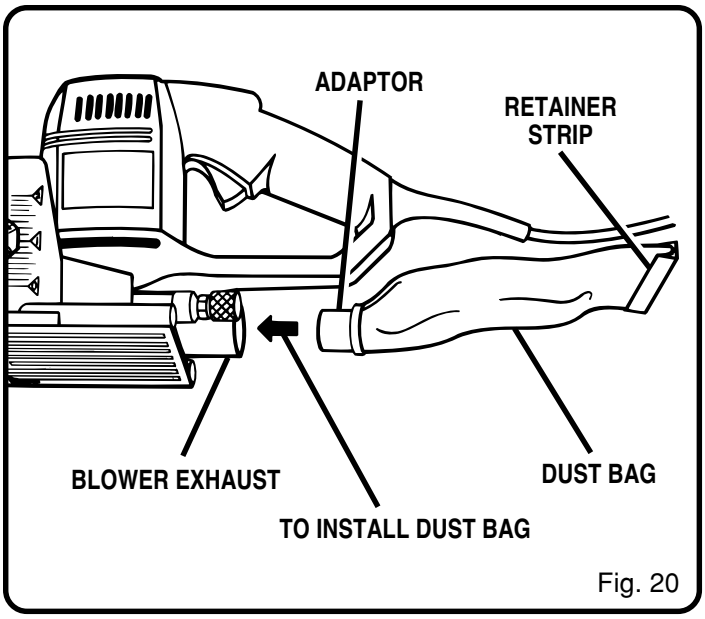


Fig. 20

EXTENSION CORDS

The use of any extension cord will cause some loss of power. To keep the loss to a minimum and to prevent tool overheating, use an extension cord that is heavy enough to carry the current the tool will draw.

A wire gage size (A.W.G.) of at least **14** is recommended for an extension cord 50 feet or less in length. A wire gage size (A.W.G.) of at least **12** is recommended for an extension cord 50 - 100 feet in length. When working outdoors, use an extension cord that is suitable for outdoor use. The cord's jacket will be marked **WA.**

⚠ WARNING:

Check extension cords before each use. If damaged, replace immediately. Never use tool with a damaged cord since touching the damaged area could cause electrical shock resulting in serious injury.

⚠ CAUTION:

Keep extension cords away from the cutting area and position the cord so that it will not get caught on lumber, tools, etc. during cutting operations.

LUBRICATION

All of the bearings in this tool are lubricated with a sufficient amount of high grade lubricant for the life of the unit under normal operating conditions. Therefore, no further lubrication

MAINTENANCE

⚠ WARNING:

When servicing, use only identical Ryobi replacement parts. Use of any other part may create a hazard or cause product damage.

CLEANING BASE ASSEMBLY / DUST BAG TUNNEL

See Figures 21-23.

After extended use, wood particles and resin may build up inside the base assembly of your plate joiner and clog the path for wood particles going into dust bag. Wood particles packing up in this area, not only defeats the dustless feature of your plate joiner, it also makes cutting biscuit slots more difficult.

HOW TO CLEAN BASE ASSEMBLY

1. **Unplug your plate joiner.**

⚠ WARNING:

Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Remove dust bag.
3. Place your plate joiner upside down on a workbench as shown in figure 21.
4. Using a screwdriver remove the two screws securing front base assembly.
5. Pull adjustable fence in the direction shown by the arrow in figure 21 and remove front base assembly.
6. Using a pair of needle nose pliers, stretch and release springs from tabs on bearing plate. *See Figure 22.*
7. Push adjustment rod away from bearing plate and remove rear base assembly.
8. With front and rear base assemblies removed, place your plate joiner upside down on a workbench and clean wood particles and resin from blade, bearing plate and surrounding areas.

⚠ CAUTION:

Be aware of cut hazard, carbide tips on blade are sharp.

9. Clean wood particles and resin from slots and surrounding areas on front and rear base assemblies. *See Figure 23.* Apply a thin coat of general purpose grease in slots or on bearing plate where base slides.
10. Replace rear base assembly. Position adjustment rod in its proper place as shown in figure 22.
11. Secure rear base assembly in place with the two springs. Hook one end of each spring in notch on each side of base assembly. Using needle nose pliers, stretch each spring and hook it over tabs on bearing plate.

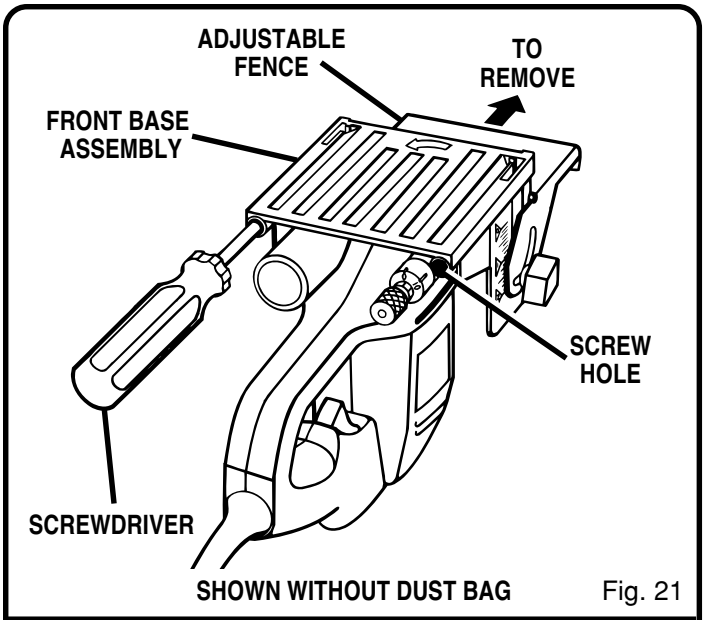


Fig. 21

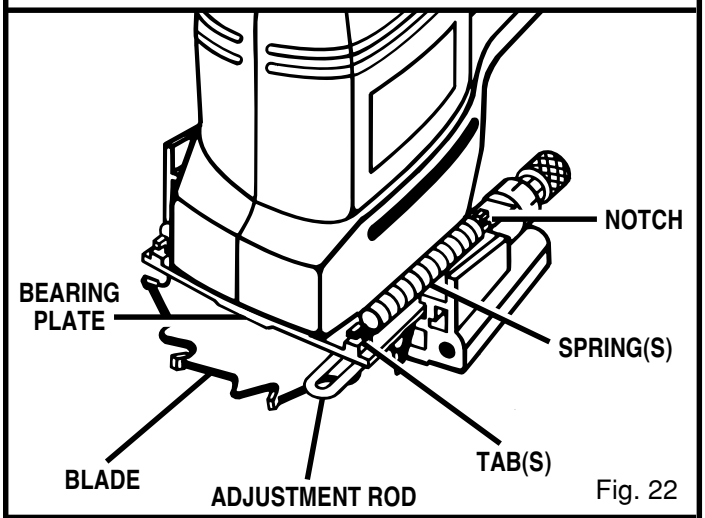


Fig. 22

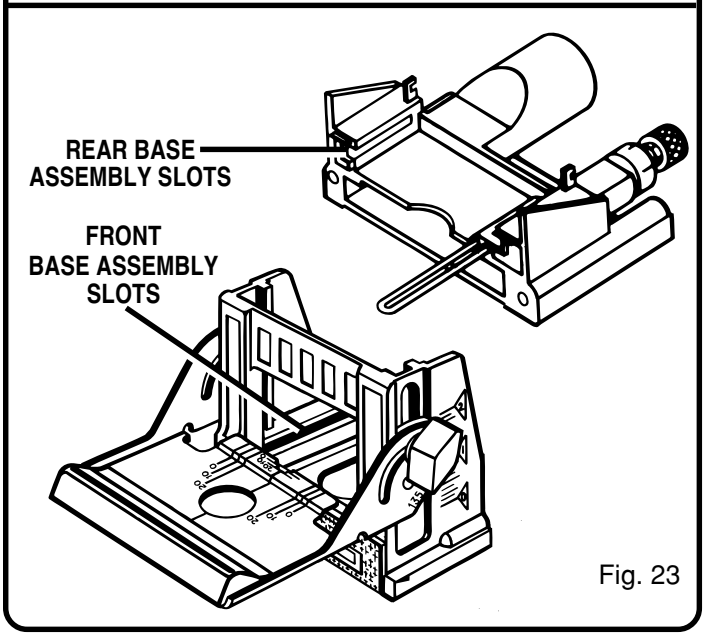


Fig. 23

12. Reassemble front base assembly.
13. Replace screws and tighten securely with a screwdriver.
14. Replace dust bag.

MAINTENANCE

BLADE REPLACEMENT

See Figures 24-27.

After extended use, the blade on your plate joiner may become dull and need replacing. If you accidentally hit a nail or other blunt object, it will break the carbide tips on the blade. These situations also require replacing the blade.

HOW TO REPLACE THE BLADE

1. **Unplug your plate joiner.**

> **⚠ WARNING:**
>
> Failure to unplug your plate joiner could result in accidental starting causing possible serious personal injury.

2. Remove dust bag.
3. Place your plate joiner upside down on a workbench as shown in figure 24.
4. Using a screwdriver remove the two screws securing front base assembly.
5. Pull adjustable fence in the direction shown by the arrow in figure 24 and remove front base assembly.
6. Using a pair of needle nose pliers, stretch and release springs from tabs on bearing plate. *See Figure 25.*
7. Push adjustment rod away from bearing plate and remove rear base assembly.
8. With base assemblies removed, place plate joiner upside down on a workbench as shown in figure 26.
9. Place a #2 Phillips screwdriver or 1/4 in. diameter pin in one of the two holes provided in bearing plate.
10. Place one of the non-cutting teeth located behind each carbide tipped cutting tooth against the screwdriver or pin and lock blade preventing it from rotating. **DO NOT lock blade against one of the cutting teeth. Carbide tips will break.**
11. Using a 3/16 in. wrench, remove blade screw. **NOTE:** Turn blade screw counterclockwise to remove. *See Figure 27.*
12. Remove outer blade washer and blade.
13. Clean wood particles and resin from blade washer, dust bag area, base assembly slots, and all surrounding parts.

> **⚠ WARNING:**
>
> If inner blade washer has been removed, replace it before installing new blade. Failure to do so could cause an accident since blade screw will not tighten properly.

14. Place inner blade washer on gear spindle. *See Figure 27.*
15. Place new blade onto shoulder of blade washer and secure with outer blade washer and blade screw.

    NOTE: Blade screw fits into cupped side of outer blade washer.

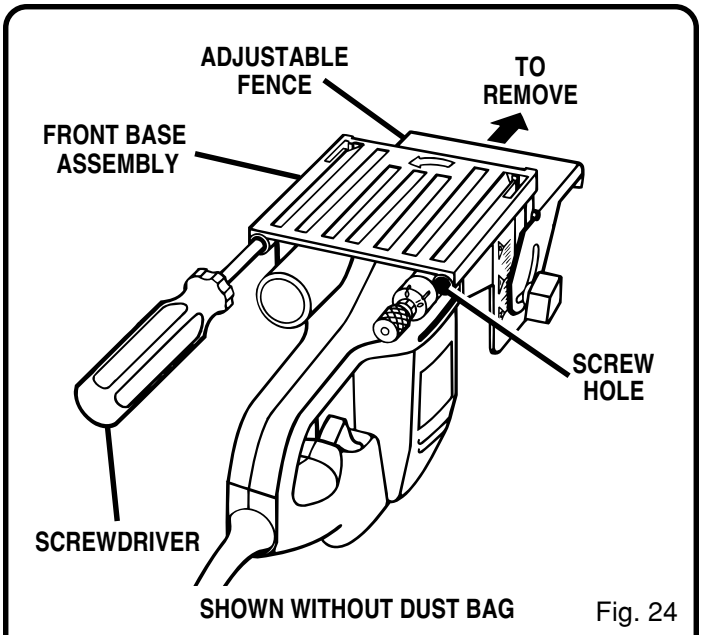


Fig. 24

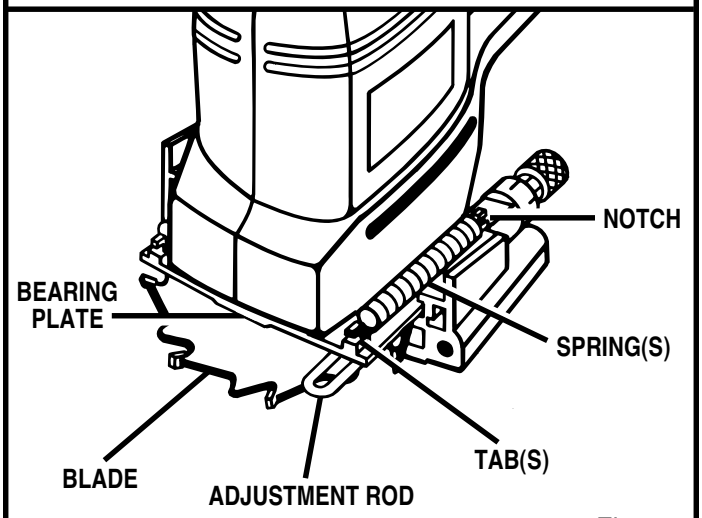
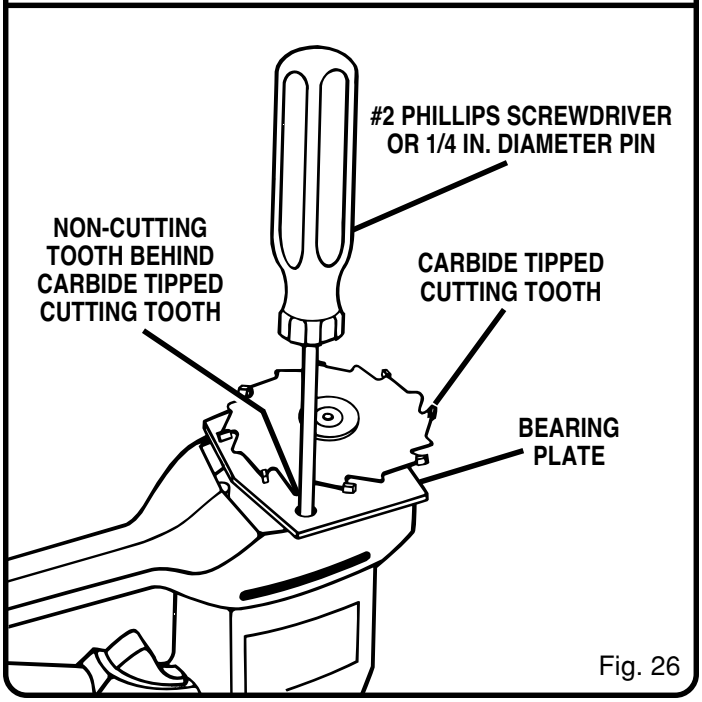


Fig. 25


#2 PHILLIPS SCREWDRIVER OR 1/4 IN. DIAMETER PIN
NON-CUTTING TOOTH BEHIND CARBIDE TIPPED CUTTING TOOTH
CARBIDE TIPPED CUTTING TOOTH
BEARING PLATE
Fig. 26

MAINTENANCE

HOW TO REPLACE THE BLADE (Continued)

NOTE: Saw teeth point toward the right of the saw when held in normal operating position. The direction of rotation is marked on the saw blade. An arrow on the bottom of the front base assembly also indicates direction of rotation. *See Figure 24.*

16. **Tighten blade screw securely. NOTE:** Turn blade screw clockwise to tighten.
17. Replace rear base assembly. Position adjustment rod in its proper place as shown in figure 25.
18. Secure rear base assembly in place with the two springs. Hook one end of each spring in notch on each side of base assembly. Using needle nose pliers, stretch each spring and hook it over tabs on bearing plate.
19. Reassemble front base assembly.
20. Replace screws and tighten securely with a screwdriver.
21. Replace dust bag.

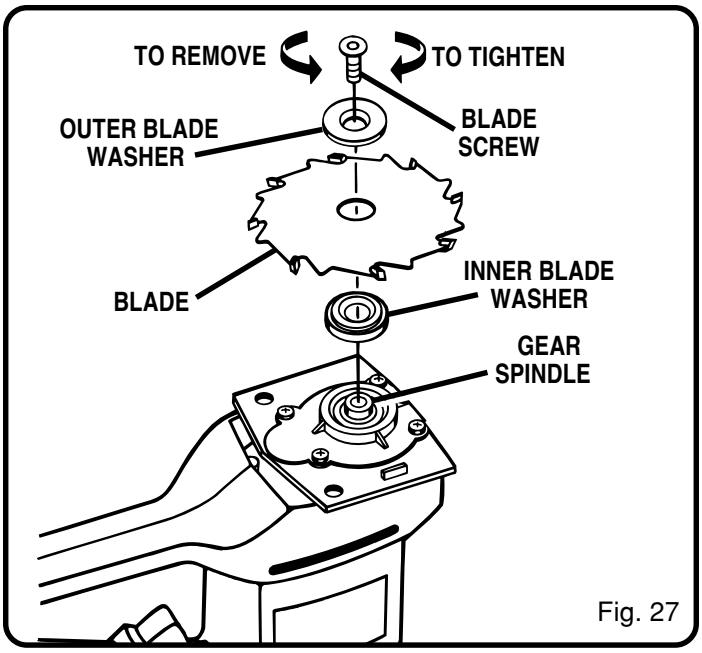


Fig. 27

Avoid using solvents when cleaning plastic parts. Most plastics are susceptible to damage from various types of commercial solvents and may be damaged by their use. Use clean cloths to remove dirt, dust, oil, grease, etc.

⚠ WARNING:

Do not at any time let brake fluids, gasoline, petroleum-based products, penetrating oils, etc. come in contact with plastic parts. They contain chemicals that can damage, weaken or destroy plastic.

When electric tools are used on fiberglass it has been found that they are subject to accelerated wear and possible premature failure, as the fiberglass chips and grindings are highly abrasive to bearings, brushes, commutator, etc. Consequently it is not recommended that this tool be used for extended work on any fiberglass material. During any use on fiberglass it is extremely important that the tool is cleaned frequently by blowing with an air jet.

⚠ WARNING:

Always wear safety goggles or safety glasses with side shields during power tool operation or when blowing dust. If operation is dusty, also wear a dust mask.

OPTIONAL ACCESSORIES

The following recommended accessories are current and were available at the time this manual was printed:

Catalog No.	Description	Quantity
4600020	Size 0 Biscuits	100 Pcs.
4600021	Size 10 Biscuits	100 Pcs.
4600022	Size 20 Biscuits	100 Pcs.
4600023	Assortment Biscuits	Total 400 Pcs.
	Includes:	
	Size 0	100 Pcs.
	Size 10	100 Pcs.
	Size 20	200 Pcs.

TROUBLESHOOTING

PROBLEM	SOLUTION
1. Biscuits do not fit slots. Biscuits not fitting slots may also cause misalignment of boards being joined.	A. Biscuit slots are too deep or too shallow. Make fine adjustments to depth setting. See **"TO MAKE FINE ADJUSTMENTS"** section on page 9. B. Biscuit thickness may be out of tolerance. Compress biscuits in a vise if they are too thick. C. Check to see if biscuits are the correct size for the size slots that have been cut: #0, #10, or #20. D. Check to see if biscuits have gotten wet and swollen.
2. Wood particles begin to backup on front of unit.	A. Dust collection system is not functioning properly. Dust bag may be full. Empty dust bag often. See **"TO EMPTY DUST BAG"** and **"TO INSTALL DUST BAG"** sections on page 16. B. The tunnel in the base may be clogged preventing wood particles from being drawn into the dust bag. Remove front and rear base assemblies and clean blade, bearing plate, base assembly slots, and surrounding areas. See **"CLEANING BASE ASSEMBLY / DUST BAG TUNNEL"** section on page 17.
3. Blade becomes difficult to push in when cutting slots. Blade does not retract properly when cutting slots.	A. Wood particles and resin have built up on base assembly slots and surrounding areas. Remove front and rear base assemblies and clean blade, bearing plate, base assembly slots and surrounding areas. Apply a thin coat of general purpose grease in slots or on bearing plate where base slides. See **"CLEANING BASE ASSEMBLY / DUST BAG TUNNEL"** section on page 17.
4. Cutting performance is poor and there is a loss of power or stalling of motor when cutting slots.	A. Blade is dull. Replace blade. See **"BLADE REPLACEMENT"** section on pages 18 and 19. B. Resin has built up on blade. Remove blade and clean blade with gum and pitch remover. See **"BLADE REPLACEMENT"** section on pages 18 and 19 for removing blade to clean and replacing blade.

NOTES

OWNER'S OPERATING MANUAL
PLATE JOINER / JM80
DOUBLE INSULATED

EXTENSION CORD CAUTION

When using a power tool at a considerable distance from a power source, be sure to use an extension cord that has the capacity to handle the current the tool will draw. An undersized cord will cause a drop in line voltage, resulting in overheating and loss of power. Use the chart to determine the minimum wire size required in an extension cord. Only round jacketed cords should be used.

When working with a tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters "WA" on the cord's jacket.

Before using any extension cord, inspect it for loose or exposed wires and cut or worn insulation.

**Ampere rating (on tool faceplate)	0-2.0	2.1-3.4	3.5-5.0	5.1-7.0	7.1-12.0	12.1-16.0
Cord Length	**Wire Size (A.W.G.)**					
25'	16	16	16	16	14	14
50'	16	16	16	14	14	12
100'	16	16	14	12	10	—

⚠ **CAUTION:** Keep the extension cord clear of the working area. Position the cord so that it will not get caught on lumber, tools or other obstructions while you are working with a power tool.

***Used on 12 gauge - 20 amp circuit.*

• SERVICE

Now that you have purchased your tool, should a need ever exist for repair parts or service, simply contact your nearest Ryobi Authorized Service Center. Be sure to provide all pertinent facts when you call or visit. Please refer to the Service Center insert or call 1-800-525-2579 in the United States or 1-800-265-6778 in Canada for your nearest Ryobi Authorized Service Center.

• MODEL NO.

The model number of your tool will be found on a plate attached to the motor housing. Please record the model number and serial number in the space provided below.

- MODEL NUMBER JM80
- SERIAL NUMBER _____

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